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# **Advancement Handbook for Cryptologic Technician Technical (CTT)**

**This Advancement Handbook was developed in August 1999.**

## **PREFACE**

The purpose of the Advancement Handbook is to assist CTTs in preparing for Navywide advancement-in-rating examinations. The bibliographies (BIBs), together with this handbook, form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the CTT rating, it helps focus study on those areas that will be tested. This feature ensures Sailors will get the most out of their study time.

Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references required to perform each skill, and the types of subject areas you can expect on the examination. The skill statements describe the skills you are expected to perform for each paygrade. They are cumulative; that is, you are responsible for all the skills for the paygrade for which you are competing, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed by CTTs. As a result, advancement examinations may contain questions more detailed than described in the "Exam Expectations" section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

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# **THE UNITED STATES NAVY**

## **GUARDIAN OF OUR COUNTRY**

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends; the United States Navy exists to make it so.

## **WE SERVE WITH HONOR**

Tradition, valor, and victory are the Navy's heritage from the past. To these may be added dedication, discipline, and vigilance as the watchwords of the present and the future.

At home or on distant stations, we serve with pride, confident in the respect of our country, our shipmates, and our families.

Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

## **THE FUTURE OF THE NAVY**

The Navy will always employ new weapons, new techniques, and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war.

Mobility, surprise, dispersal, and offensive power are the keynotes of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

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# Part 1

## Advancement Handbook for CTT3

## Advancement Handbook for CTT3

General CTT3 <i>Skill Area</i>	<b>Information Systems (IS)</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Manipulate computers and peripheral equipment. Create computer files. Verify computer files. Maintain computer files. Communicate electronically. Perform local area network (LAN) computer functions.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"><li>• Computer hardware components</li><li>• General word processing functions</li><li>• General electronic mail functions</li><li>• General LAN computer functions</li><li>• General computer security procedures</li></ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"><li>• Joint DODIIS/Cryptologic SCI Information Systems Security Standards</li><li>• NEETS Module 22</li></ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on IS security, accreditation, computer hardware components, computer files, applications, and computer operating systems.

## Advancement Handbook for CTT3

General CTT3 <i>Skill Area</i>	<b>Security</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Mark, inventory, and destroy classified material. Prepare classified material destruction reports. Perform emergency destruction procedures. Implement physical, operational, and information security programs, and comply with INFOSEC, COMSEC, and OPSEC requirements. Conduct security checks, and change combination locking devices.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Classification marking procedures</li> <li>• Routine destruction procedures</li> <li>• Emergency destruction procedures</li> <li>• Security requirements relating to naval, operational, and physical security</li> <li>• Combination locking devices change procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Joint DODIIS/Cryptologic SCI Information Systems Security Standards</li> <li>• NSGTP Module 1</li> <li>• NSGTP Module 11</li> <li>• SECNAVINST 5510.30A</li> <li>• SECNAVINST 5510.36</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about cryptologic and intelligence organizations, the Naval Security Group command, security procedures, routine and emergency destruction procedures, and handling of classified material.

## Advancement Handbook for CTT3

General CTT3 <i>Skill Area</i>	<b>Cryptologic Operations</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	<p>Record signals. Plot lines of bearing and determine fix. Calculate time zone conversions. Perform signal search, identification and signal analysis. Prepare and disseminate reports on signals. Fuse all source intelligence information. Use TDP symbols and terminology. Use reference publications. Identify radio wave propagation and modulation principles. Identify antennas and transmission lines. Identify meaconing, interference, jamming, and intrusion. Calculate radar system capabilities and limitations. Handle, stow, and splice magnetic tapes. Prepare and maintain EOB.</p>
Knowledge you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Map reading techniques</li> <li>• Various receiver operating principles</li> <li>• Various recorder operating principles</li> <li>• Various signal analysis equipment operating principles</li> <li>• Various reporting formats</li> <li>• Time zone conversion techniques</li> <li>• Various TDP equipment operating principles</li> <li>• Radio wave propagation principles</li> <li>• Modulation principles</li> <li>• Various antennas and transmission lines operation</li> <li>• Radar systems</li> <li>• Math formulas</li> <li>• Various EOB databases</li> </ul>



# Advancement Handbook for CTT3

## Continued

General CTT3 <i>Skill Area</i>	<b>Cryptologic Operations</b>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"><li>• EA-183</li><li>• EPL</li><li>• NEETS Module 10</li><li>• NEETS Module 13</li><li>• NEETS Module 18</li><li>• NEETS Module 23</li><li>• NSGTP Module 4</li><li>• NSGTP Module 9</li><li>• NSGTP Module 16</li><li>• USSID 140</li></ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on radar systems, radio wave propagation and modulation, antennas and transmission lines, collection and reporting procedures including related equipment, and EOB databases. You should also be prepared to solve problems using math formulas and to determine fixes on SOIs.

## Advancement Handbook for CTT3

General CTT3 <i>Skill Area</i>	<b>Communications</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Update information warfare publications. Handle message traffic.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Basic administrative procedures</li> <li>• Message priorities, dissemination procedures, and formats</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• NSGTP Module 2</li> <li>• NSGTP Module 11</li> <li>• NSGTP Module 28</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on message traffic, classified material handling, and information warfare publications.

## Advancement Handbook for CTT3

General CTT3 <i>Skill Area</i>	<b>General Watchstanding</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform rapid emitter identification and disseminate tactical information.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Radar emitters and systems</li> <li>• Radar reference publications</li> <li>• Various reporting formats and circuits</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• EPL</li> <li>• NEETS Module 18</li> <li>• NSGTP Module 2</li> <li>• NSGTP Module 4</li> <li>• SEDSCAF Manual</li> <li>• USSID 140</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on ELINT collection, processing, analysis, and reporting procedures, radar principles, radar parameters, radar identification, and HULTEC.

## Advancement Handbook for CTT3

General CTT3 <i>Skill Area</i>	<b>Technical Administration</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain cryptologic publications, files, logs, records, and SOPs. Prepare correspondence, reports, and messages.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Administrative procedures for receiving, updating, storing, and making changes to publications and SOPs</li> <li>• Administrative procedures for filing correspondence, messages, and reports</li> <li>• Various formats for correspondence, reports, and messages</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• NSGTP Module 11</li> <li>• USSID 140</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on general administrative procedures, handling of classified materials, and formats for administrative reports.

## Advancement Handbook for CTT3

General CTT3 <i>Skill Area</i>	<b>Management Supervision</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate SIGINT collection, analysis, and reporting.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• SIGINT collection requirements</li> <li>• SIGINT analysis principles</li> <li>• SIGINT reporting formats and procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• NSGTP Module 2</li> <li>• NSGTP Module 4</li> <li>• NSGTP Module 15</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on SIGINT collection, analysis, and reporting procedures including related equipment.

## Part 2

### Advancement Handbook for CTT2

## Advancement Handbook for CTT2

General CTT2 <i>Skill Area</i>	<b>Information Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Identify computer hardware components and their capabilities. Perform wide area network (WAN) computer functions. Monitor IS policies and procedures.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Computer hardware components</li> <li>• WAN topology</li> <li>• IS policies</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Joint DODIIS/Cryptologic SCI Information Systems Security Standards</li> <li>• NEETS Module 22</li> <li>• NSGTP Module 11</li> <li>• SECNAVINST 5510.30A</li> <li>• SECNAVINST 5510.36</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on IS security, policy, and accreditation, computer components, applications, computer operating systems, and network fundamentals.

## Advancement Handbook for CTT2

General CTT2 <i>Skill Area</i>	<b>Security</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Implement emergency action plan (EAP). Evaluate physical, informational, and operational security programs.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Local EAP instruction.</li> <li>• Local physical security instruction</li> <li>• Local information security instruction</li> <li>• Local operational security instruction</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Joint DODIIS/Cryptologic SCI Information Systems Security Standards</li> <li>• NSGINST 5510.7B</li> <li>• NSGTP Module 1</li> <li>• NSGTP Module 11</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about cryptologic and intelligence organizations, the Naval Security Group command structure, security procedures, destruction procedures, physical security procedures, and handling of classified material.



## Advancement Handbook for CTT2

General CTT2 <i>Skill Area</i>	<b>Cryptologic Operations</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Report information derived from HULTEC and SEI. Process SIGINT Alerts and CRITICs.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• HULTEC techniques</li> <li>• SEI techniques</li> <li>• EOB databases</li> <li>• SIGINT Alerts</li> <li>• CRITIC reporting requirements, methods, and formats</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• EPL</li> <li>• NEETS Module 18</li> <li>• NSGINST C3301.1C</li> <li>• NSGTP Module 2</li> <li>• NSGTP Module 4</li> <li>• NSGTP Module 15</li> <li>• USSID 140</li> <li>• USSID 240</li> <li>• USSID 301</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on ELINT reporting, SEI and HULTEC, EOB databases, SIGINT alerts and CRITIC handling.

## Advancement Handbook for CTT2

General CTT2 <i>Skill Area</i>	<b>General Watchstanding</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Use communications networks. Resolve identification conflicts. Use TDPs.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• SI and GENSER communications systems</li> <li>• Radar parameters</li> <li>• AOB, NOB, EOB</li> <li>• TDP equipment</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• NSGTP Module 2</li> <li>• NSGTP Module 4</li> <li>• NSGTP Module 9</li> <li>• NSGTP Module 15</li> <li>• NSGTP Module 28</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on radar parameters, Order of Battle, ELINT systems, air, ship, and land-based electronic fits, TDP equipment, and SI and GENSER communications systems including equipment.

## Advancement Handbook for CTT2

General CTT2 <i>Skill Area</i>	<b>Technical Administration</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Provide quality control of outgoing administrative and intelligence reports. Draft cryptologic technical reports. Manage ELINT collection.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Administrative report formats</li> <li>• Intelligence report formats</li> <li>• Cryptologic technical report formats</li> <li>• ELINT collection requirements</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• NSGTP Module 2</li> <li>• NSGTP Module 4</li> <li>• NSGTP Module 9</li> <li>• NSGTP Module 15</li> <li>• NSGTP Module 22</li> <li>• USSID 140</li> <li>• USSID 240</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on administrative, cryptologic, and intelligence reporting criteria, and ELINT collection requirements including tasking messages.

## Advancement Handbook for CTT2

General CTT2 <i>Skill Area</i>	<b>Management Supervision</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct security and emergency destruction.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Security procedures</li> <li>• Emergency destruction procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Joint DODIIS/Cryptologic SCI Information Systems Security Standards</li> <li>• NSGTP Module 11</li> <li>• SECNAVINST 5510.30A</li> <li>• SECNAVINST 5510.36</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on physical and information security requirements and routine and emergency destruction requirements and procedures.

## Part 3

### Advancement Handbook for CTT1

## Advancement Handbook for CTT1

General CTT1 <i>Skill Area</i>	<b>Information Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain and coordinate IS operations.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• IS policies and procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Joint DODIIS/Cryptologic SCI Information Systems Security Standards</li> <li>• NSGTP Module 11</li> <li>• SECNAVINST 5510.30A</li> <li>• SECNAVINST 5510.36</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on IS security and accreditation, computer components, files, applications, and operating systems.

## Advancement Handbook for CTT1

General CTT1 <i>Skill Area</i>	<b>General Watchstanding</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	EW/IW tactics.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Tactical decision aids</li> <li>• EW publications and instructions</li> <li>• IW publications and instructions</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• NSGTP Module 2</li> <li>• NSGTP Module 22</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the handling of EW and IW publications and instructions, and the use of tactical decision aids

## Advancement Handbook for CTT1

General CTT1 <i>Skill Area</i>	<b>Technical Administration</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Respond to JCS alert conditions.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• JCS alert conditions</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• NSGINST C3301.1C</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on JCS alert conditions.



## Advancement Handbook for CTT1

General CTT1 <i>Skill Area</i>	<b>Management and Supervision</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate ELINT collection, analysis, and reporting.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• ELINT collection procedures</li> <li>• ELINT analysis procedures</li> <li>• ELINT reporting procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• EPL</li> <li>• NSGTP Module 2</li> <li>• NSGTP Module 4</li> <li>• NSGTP Module 9</li> <li>• NSGTP Module 22</li> <li>• SEDSCAF Manual</li> <li>• USSID 140</li> <li>• USSID 240</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on ELINT collection, analysis, and reporting including equipment and ELINT tasking.

## Part 4

### Advancement Handbook for CTTC

## Advancement Handbook for CTTC

General CTTC <i>Skill Area</i>	<b>General Cryptologic Administration</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review MOU and ISSA. Review cryptologic resource utilization, capabilities, reliabilities, and operations. Coordinate DIRSUP operations. Enforce cryptologic and security requirements including INFOSEC, COMSEC, and OPSEC.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• INFOSEC, COMSEC, and OPSEC requirements</li> <li>• Cryptologic tasking requirements</li> <li>• Cryptologic manning requirements</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• NSGTP Module 2</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on cryptologic tasking and manning requirements, DIRSUP operations, and cryptologic security requirements including INFOSEC, COMSEC, and OPSEC requirements.

# Appendix 1

## References Used in This Advancement Handbook

ELINT Parameter Limits (EPL) List

Joint DODIIS/Cryptologic SCI Information Systems Security Standards

NEETS Module 10

Introduction to Wave Propagation, Transmission Lines, and Antennas,  
NAVEDTRA B72-10-00-93

NEETS Module 13

Introduction to Number Systems and Logic Circuits, NAVEDTRA B72-13-00-94

NEETS Module 18

Radar Principles, NAVEDTRA B72-18-00-84

NEETS Module 23

Magnetic Recording, NAVEDTRA B72-23-00-91

NSG Module 1

Naval Cryptology in National Security, NSGTP 683-01-00-97

NSG Module 2

Fleet Operations: Command and Control Warfare and Electronic Warfare Systems,  
NSGTP 683-02-00-99

NSG Module 4

Cryptologic Operators Manual for ELINT Operations, NSGTP 683-04-00-94

NSG Module 9

Cryptologic Collection Equipment, NSGTP 683-09-00-96

NSG Module 11

SCI Security and Emergency Destruction, NSGTP 683-11-00-98

NSG Module 15

SIGINT Reporting, NSGTP 683-15-00-98

NSG Module 22

Fleet Operations: Orientation, NSGTP 683-22-00-97

NSG Module 28  
Shipboard Communications, NSGTP 683-28-00-94

SECNAVINST 5510.30A  
Department of the Navy Personnel Security Program

SECNAVINST 5510.36  
Department of the Navy (DON) Information Security Program (ISP) Regulation

Standard ELINT Data System Codes and Formats (SEDSCAF) Manual

USSID 140

USSID 240

USSID 301